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ABSTRACT

Peer tutoring sessions involving two eighth-grade girls were recorded and analyzed through a Vygotskian lens. A "microgenetic analysis" of particular protocol excerpts from the tutoring sessions was conducted. When a lapse of intersubjectivity existed, participants frequently launched into narrative as a mediating device to negotiate a shared sense of reality. When the tutee became capable of independently solving problems involving the scientific concept of operations with negative numbers, none of the verbiage, none of the semiotic mediators were necessary any longer. The role of language as a mediating factor in the learning process can be seen in the process of an anthropology undergraduate attempting to enter an academic discourse community. What is particularly intriguing are the multivoices within the presentation of the Native American ritual "Vision Quest." This phenomenon of multi-voices points to several Bakhtinian notions. In Vygotskian terms, all learning experiences are first inter-psychological or social in nature before they are internalized as a part of the intra-psychological plane of consciousness. (Excerpts from the undergraduate student's journal entries, a portion of a taped interview with the student, and an excerpt from the script are attached.) (RS)

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Two Negatives Equal a Positive: Semiotic Mediation in Peer Tutoring

Recently, I observed a peer tutoring situation, as a kind of dialogic interchange, analyzing it through a Vygotskian lens. I recorded and analyzed peer tutoring sessions involving two eighth grade girls: Kerry and Amy, tutor and tutee, respectively. Aware of Amy's difficulty with introductory algebra, the eighth grade math teacher suggested that Amy seek peer assistance from someone in the more advanced algebra class -- Kerry fit the bill.

I was curious to observe exchanges involving an untrained tutor to see what actions were taken, if progress was made, what changes occurred, etc. over the course of approximately five weeks of tutoring. After transcribing the tapes, I conducted a kind of "microgenetic analysis" (to borrow James Wertsch's term) of particular protocol excerpts from tutoring sessions.

The brief segments of dialogue I'd like to share with you (on your handout) pertain to the equation you see on the screen. My two "actresses" will now assist me in reenacting the episodes. You may wish to follow along with the printed version included in your handout. Listen for how intersubjectivity is established, how it lapses and must be re-negotiated.

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Peer Tutoring Protocol -- Session I

Episode One

Amy: O.K. (giggles nervously) x + 4 + -10

Kerry: No, equals -10. All right. Now what do you have to do?

Amy: Then you have to plus it, plus it to 10.

Kerry: What do you do, how do you do to get the 4 to drop out here?

Amy: You have to subtract 4.

Kerry: O.K. So do that on both sides.

First the equation is clarified, that is, intersubjectivity has to be established. In response to Kerry's first question, Amy indicates a vague understanding that some addition must take place. However, there is confusion indicated by the unclear referential, "plus it," to 10. Kerry's second question obviously negotiates an opening to Amy's pre-conceptual understanding of the necessity to eliminate factors from one side of an equation. A firm, definite answer provided by Amy allows the girls to share a common situation definition here.

A little later in the session--

Episode Two Note the variety of semiotic mediational devices.

Kerry: No ... umkay. Look. You have your number line like this, see? [draws number line] and you've got, umm.. -15, -14, -13, -12, -11, -10, -9 and on and on and on in each

direction. Umkay. Now let's say I owe you ten bucks.

Amy: Right.

Kerry: O.K. Well, O.K. let's say I owe you $20.

Amy:(laughs)

Kerry: I owe you 20, but I already paid you 10. So now I only owe you 10 . . . dollars. Right?

Amy: Right.

Kerry: But let's say I ... give you back those 4, I give you back four dollars of it. O.K. just, just for the heck of it. So then how much do you owe me? You owe me, you owe me 4, now you owe 4 more because you have that

Amy: [looking puzzled]

Kerry: You . . . O.K.

Recognizing the need for additional semiotic mediation, Kerry now attempts to use different mediational devices what James Wertsch would call "context-information referring expressions." First, she employs the visual aid of the number line, followed by a currency metaphor, and a narrative about owing money. She unconsciously taps what Holland and Valsiner describe as an elaboration of models "developed through their interrelationship with narratives, metaphors" etc.. . . (263). Clearly sharing situation definitions at this juncture, Amy firmly answers, "right." However, Kerry then becomes confused in the verbalization of the concept of subtracting negative numbers as Vygotsky suggests is typical of adolescent thinking in this transitional stage in

the consciousness as truly adult abstract thinking is still in formation, the thinking that allows for the verbalization of concepts, not just the utilization. In turn, Amy's facial expressions of puzzlement act as a physical sign to alert Kerry to her error. Intersubjectivity must be re-negotiated. It is interesting to note here, I believe, the benefits of tutoring for the tutor. As Forman and Cazden argue, a tutor can "benefit from challenges to formulate academic content in words" indeed, "the demands of tutoring, including the need for repeated formulation and for corrections of others, provide that challenge well" (327).

Episode Three -- here the role of narration is particularly significant.

Amy: (laughs)

Kerry: All right. You owe me, you owe me $20. A-n-d I ... and you pay me 10 and then you really, then you're broke. And you really need $4 ... to go buy some tapes. So I lend you the 4, the $4. So now you owe me

Amy: 14 (quietly interrupts)

Kerry: 4 more. So now you owe me $14.

Amy: Right.

Kerry: See. 'Cuz you're moving back another 4. That's the same as subtracting 4.

Amy: O.K.

Kerry restructures her verbalization and correctly delivers

the narrative. It appears that Kerry's grasp of the concept has been clarified in that manner. Kerry is re-scaffolding the concept for herself while tutoring Amy. Interestingly, the narrative mediating device does work, at least momentarily, as Amy, however timidly, offers the response, "14." Furthermore, Amy confirms Kerry's reiterations.

The role of narrative as a mediating factor in the learning process is gaining significant attention today in the work of Jerome Bruner, Anne Di Pardo, David Jolliffe and several others. I find it interesting that in all of the tapes we've seen, when a lapse in intersubjectivity exists participants frequently launch into narrative as a mediating device to negotiate a shared sense of reality. Indeed, as Bruner argues, we structure our world narratively.

And now some weeks later -- Note the difference in the nature of the exchange as Amy progresses.

Episode Four

Kerry: . . . solve that. [tosses notebook to Amy]

Amy: 2x = -14. Two times fourteen?

Kerry: No, two times x.

Amy: Oh.

Kerry: Solve that problem.

Amy: Umm. Two goes into 14, . . . -7.

Kerry: Very good!

Note the abbreviated speech (which Wertsch argues is a interpsychological indicator just as Vygotsky argues it is an indicator of intra-psychological functioning or developing inner speech). Amy's zone of proximal development has shifted. Now that she is clearly capable of independently solving problems involving the scientific concept of operations with negative numbers, none of the verbiage, none of the semiotic mediators (narratives, metaphors, visual aids) are necessary any longer. The changes in the nature of the semiotic mediation are indicative of the movement from inter to intrapsychological functioning. Kerry's "loan of consciousness" helped to scaffold an advancement, and the peer tutoring experience affected notable changes in both the tutee and tutor.

My interest in Vygotskian analysis of dialogic exchanges coupled with my growing interest in Bakhtinian theory, as well as the whole question of the nature of learning and the nature of language as a mediator in the learning process have led me to my current research concerning students involved in the Writing -in-the-Disciplines program at my university. I am now looking closely at several undergraduates in the anthropology department of UIC who are taking a writing intensive course in their dept. required of declared majors. Once again I am most interested in the role of language as a mediating factor in the learning process -- in this

case in the process of attempting to enter an academic discourse community.

The segment of the student text that you are about to hear was created for an anthropology assignment. The students were asked to develop a portion of their thematic study for the semester (on an anthropological topic of their own choosing) into a short script for oral presentation that would introduce a topic to a freshman anthropology audience. Jennifer, the student that you will hear from is studying Native American cultural rituals - here specifically she describes a ritual labelled a "Vision Quest."

What I find particularly intriguing are the multivoices within this presentation. From my own participant-observation in this class, I am aware of this student's interest in the Lakota culture following a personal experience on a Lakota reservation which resulted in the formation of several friendships within the tribe. I am also aware of the fact that this student is nearing graduation and is experiencing that painful period of confusion, wondering exactly what to pursue at this juncture in her life.

Prior to my sharing some of Jennifer's script with you, I ask that you look for a moment at the journal entries and interview segments included in your handout which my colleagues will once again recreate for you. (HANDOUT PERFORMANCE) I will then read a short segment of Jennifer's paper. The complete text of the paper is in your packet.

I believe it is significant to be aware of the different speech genres that are present here -- the voice of the student in the classroom as a formal reciter of material and the voice of the neophyte anthropologist who is conducting cultural research are occurring simultaneously with the voice of the young woman searching for her own vision, the voice of a young woman narrating her experience with new-found friends.

This phenomenon of multi-voices points to several Bakhtinian notions: namely, the dialogic nature of learning and language -- that every utterance is a response to another and the impetus for still another -- that multi-voices are always present in every utterance or in other words, that every exchange is a compilation of multiple speech genres -- that in every utterance there inheres that characteristic tension of the mingling of centripetal and centrifugal forces in language and in experience -- that every experience and every attempt to learn and/or negotiate a new level of understanding is necessarily a instantiation of what Bakhtin class "the simultaneity of self and other." Thus, while Jennifer is learning abstract material about the nature of Native American rituals that learning is clearly heightened by her interest in the potential of the ritual as a source of personal guidance.

And in Vygotskian terms, we can recall that all learning experiences are <u>first</u> inter-psychological or <u>social</u> in nature before they are internalized as a part of the intra-psychological plane of consciousness. Jennifer's social experience with the

Lakota tribe was her first social contact with the ritual of visioning. That new knowledge has been significantly personalized, as a potential avenue for greater self-knowledge.

Mulvaney
CCCC/ April 1993

Multiple Voices in Student Recitation

Jennifer's Journal Entry --

. . . [to find information to write the script]
. . . "I called my friend (who is Lakota) and asked him to explain to me this ritual. He has done vision quests before and gladly explained the idea of the vision quest. He wouldn't tell me about his actual experience of the vision because it is not good to tel others of your visions, but he did tell me he received a message. . . . Perhaps this summer I will do a vision quest, (I am hoping to do one) and then if I write another it will be a personal experience -- like a confessional tale" [reference to Van Maanen].

Taped interviews with Jennifer --

[When asked what she is going to pursue professionally upon graduation this May, Jennifer responded, indicating her confusion.]

. . . "So I don't know, I'm, I'm kinda of like, all these different things that I like doing, I'm still trying to figure out where it is that I fit in."

[A month later --]

"A vision quest is something that I want to personally do. I want to do a vision quest. And in order to do it, I can't just read books anymore I need to get someone that will do it with me."

[Asked if her interest was to understand more about it as a ritual or if it is to personally come to some greater level of self-understanding, Jennifer responded.]

"It's personal. For me, it has nothing to do with any kind of research or anything. It's just that I personally, I want to, I feel that I'm at a point in my life where I'm about to graduate and I think that the spiritual side of it will . . . like I'm gonna try and find an answer. . . to a question that I'm not even sure of what it is . . . I'm looking for a direction."

Mulvaney
CCCC/April 1993

An Excerpt from Jennifer's Script -- Vision Quest

The Vision Quest is a ritual used by the Native Indians in which a person seeks answers and direction from the Great Spirit. Visioning (lamenting) helps one to realize their oneness with all things, to know that all things are their relatives, and that the Great Spirit is anxious to aid those who seek him with a pure heart.

There are other reasons as well that a person would seek out a vision. People "lament" to make themselves brave before a sundance; they may "lament" to ask the Great Spirit to cure a sick relative, or as an act of thanksgiving. The vision quest is a time set apart from daily life in order to seek a special vision and fill a need that one preceives [sic] within him or herself.

It is very important for a person who wishes to do a vision quest to get the aid and advice from a Holy Man so that everything is done correctly. When a person "laments" he or she may spend four days without food or water, alone, and on a hill or mountain. At the chosen place for the vision quest a person (and her or his helpers) set up the sacred place. This sacred place must be known to the helpers so that they can check on the lamenter from time to time and make sure he or she is ok during the quest.